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New limit from the search for $0\nu\beta\beta$ of ^{100}Mo with the CUPID-Mo experiment

The CUPID-Mo experiment, currently taking data at the Laboratoire Souterrain de Modane (France), is a demonstrator for a next-generation upgrade of the first ton-scale cryogenic $0\nu\beta\beta$ -search, CUORE. The experiment is probing $0\nu\beta\beta$ of ^{100}Mo with an array of 20 enriched 0.2 kg Li_2MoO_4 crystals and Ge light detectors allowing to distinguish α from β/γ events by the detection of both heat and scintillation light signals. For the present analysis, we will employ the excellent bolometric performance of down to 5-6 keV energy resolution (FWHM) at 2615 keV, full α -to- β/γ separation and excellent radio-purity levels to perform a competitive search for $0\nu\beta\beta$ of ^{100}Mo . With more than 2 kg-yr of exposure an exclusion sensitivity comparable to the leading limit from NEMO-3 is expected.

Mini-abstract

New CUPID-Mo $0\nu\beta\beta$ result using cryogenic scintillating $\text{Li}_2^{100}\text{MoO}_4$ crystals

Experiment/Collaboration

CUPID-Mo

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